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REMARKS

Pending Claims

Claims 32 and 33 have been amended to more clearly describe Applicant's invention. In particular, each of these claims has been amended to specify the type of alkyl group, and support for this amendment can be found, for example, on page 6, lines 8-20, page 7, lines 13-14 and 26-33, and page 8, lines 9-11. Also, claim 33 has been amended to specify the type of polymeric groups, and support for this amendment can be found, for example, on page 9, lines 16-17. No new matter has been added. Finally, new claims 40 and 41 have been added which recite specific embodiments of the present invention. In particular, these claims recite specific types of attached organic ionic groups (i.e., at least one aromatic or C1-C12 alkyl group further substituted with at least one -COO⁻, -SO₃⁻, -HPO₃⁻, or -PO₃²⁻ group), and also include the amendments discussed above relating to claims 32 and 33. Support for these new claims can be found, for example, on page 9, line 20, to page 10, line 20. Thus, claims 8-10, 12-19, 21-25, 29, and 32-41 are pending.

Rejection under 35 U.S.C. § 112, Second Paragraph

Claims 8-10, 12-19, 21-25, 29, and 32-39 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

In particular, on page 2 of the Office Action, the Examiner states that claims 32-33 recite the phrase "at least one organic group comprising at least" and further states that the expression "comprising" is vague and indefinite because this means that the at least one organic ionic group may contain additional components. Also, on page 3 of the Office Action, the Examiner states that claims 32-33 recite the phrases "alkyl group" and "repeating monomer groups, multiple monomer groups" and further states that these expressions are vague and

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indefinite because each does not specify "the range of carbon atoms for alkyl group" and the kind of "repeating monomer groups, multiple monomer group" for the claimed compound. The Examiner requires appropriate correction for these.

Regarding the expression "comprising", Applicant continues to strongly disagree with the Examiner's reluctance to allow usage of this expression in the present claims. This is a well understood transitional phrase that is acceptable according to the MPEP (2111.03). Furthermore, Applicant believes that this phrase does not lead to any vagueness or indefiniteness for the present claims. In particular, claims 32 and 33 each specifically recite that the carbon black product has attached at least one organic ionic group, and that this group includes specifically recited types of groups. Thus, while the term "comprising" allows for further substituents or groups to be present as part of the organic ionic group, this claim clearly recites the important and specific aspects of this attached group – it is attached, it is organic, and it has at least one $-COO^-$, $-SO_3^-$, $-HPO_3^{2-}$, or $-PO_3^{2-}$ group. With these clearly defined, Applicant believes that these claims do particularly point out and distinctly claim the subject matter with Applicant regards as the invention, and use of the expression "comprising" does not create any ambiguity to the metes and bounds of this attached group which contains the specifically recited elements. Applicant therefore respectfully requests that the rejection of these claims for use of the expression "comprising" be withdrawn.

Regarding the phrases "alkyl group" and "repeating monomer groups, multiple monomer groups", Applicant also believes that these phrases are clear and would be readily understood in the art, particularly in light of the present disclosure. However, in order to advance the prosecution of this application, Applicant has amended claims 32 and 33 to recite that the alkyl group is a C1-C12 alkyl group and that the group "polymer" represents specific types of polymeric group. Applicant believes that this amendment provides additional clarification for each of the identified phrases.

In view of these amendments, Applicant respectfully request that the rejection of claims 8-10, 12-19, 21-25, 29 and 32-39 under 35 U.S.C. § 112, second paragraph be withdrawn.

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Regarding new claims 40 and 41, each of these claims recites a specific embodiment of the present invention in which the carbon black product has attached "at least one aromatic or C1-C12 alkyl group further substituted with at least one -COO⁻, -SO₃⁻, -HPO₃⁻, or -PO₃⁻² group". Also, these claims include the amendments discussed above relative to claims 32 and 33. Thus, each of these new claims are therefore similar to claims 32 and 33 but recite more specific types of attached organic ionic groups – aromatic or C1-C12 alkyl groups further comprising the specifically recited groups. Applicant believes that these new claims particularly point out and distinctly claim the subject matter Applicant regards as the invention, providing additional clarification for the attached organic ionic group, and is therefore also not vague or indefinite.

Rejection under 35 U.S.C. § 103(a)

Claims 9-10, 12-13, 21-25, and 32-39 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Adams et al. (U.S. Patent No. 5,698,016).

In paragraph 3 of the Office Action, the Examiner states that Adams et al. teaches a pigment such as carbon black having attached at least one organic group substituted with an ionic group along with an amphiphilic ionic group, such as an alkylbenzene sulfonate or an alkyl sulfonate group, and furthermore, that the organic group can be at least one aromatic group substituted with one branched C1-C12 alkyl group. The Examiner also states that the carbon black product was treated with a polymeric cationic amphiphile containing amine.

In addition, the Examiner also states that the present invention differs from the prior art Belmont et al. in that the claimed steric group is specified, but that, since Adams et al. describes that the organic group can be at least one aromatic group substituted with one branched C1-C12 alkyl group, it follows that the bulky group such as the aromatic group can be used as either the organic group or the steric group depending on the choice of the skilled artisan and that, therefore, if the skilled artisan had desired to formulate the pigment product containing the steric group attached to the pigment, it would have been obvious to be motivated

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to use the Belmont's et al. substituted aromatic compound as the organic group having the steric group in the Belmont's et al. modified carbon black.

Applicant respectfully requests clarification concerning this rejection. In particular, the identified claims are stated as being rejected over only Adams et al. (U.S. Patent No. 5,698,016). However, in the rejection, the Examiner also appears to be combining the teaching of this reference with "Belmont et al.", but nowhere in the Office Action is this reference identified. Applicant is unclear if the present claims are also rejected over Belmont et al. and, if they are, without knowing which Belmont et al. reference the Examiner has meant, Applicant cannot readily prepare arguments and/or amendments to overcome this rejection.

However, regarding Adams et al., it appears, by the comments provided in the Office Action, that the Examiner is stating that, since the attached group disclosed in Adams et al. may have both an amphiphilic counterion and may be further substituted with an C1-C12 alkyl group, that this group can be used either as a steric group, which is recited in a) of present claims 32 and 33, or as an organic ionic group having an amphiphilic counterion, which is recited in b) of present claims 32 and 33. As a result, the Examiner appears to conclude that it would be obvious to use such a group to prepare modified pigments such as is presently claimed.

Regarding claims 9-10, 12-13, and 32-39, claims 32 and 33 each recite a carbon black product having attached at least one specified steric group and at least one organic ionic group. Thus, the recited carbon black has two different types of attached groups. By comparison, Adams et al. discloses modified carbon products having attached organic groups and amphiphilic counterions. However, there is no disclosure, teaching or suggestion in Adams et al. that the disclosed attached groups can or should be used in combination with a second, different type of attached group, particularly either of the specific types of steric groups recited in present claims 32 or 33. Even if, as suggested by the Examiner, one skilled in the art considered the group identified by the Examiner from Adams et al. as being both a steric group and an organic ionic group having an amphiphilic counterion, the modified carbon product of Adams et

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al. would still have only one type of attached group - the steric group and the amphiphilic counterion are part of the same attached group. Furthermore, the Examiner has not provided any evidence that one of ordinary skill in the art, based on the teaching of Adams et al., would have been motivated to use a second, different attached group in combination with those disclosed in Adams et al., thereby arriving at the present invention, or that there would be any reasonable expectation of success (that is, that inclusion of one attached group would not interfere or compete with the second attached group).

Therefore, Applicant believes that claims 32 and 33 are patentable over Adams et al. since this reference does not disclose, teach, or suggest a carbon black product having attached both an organic ionic group having an amphiphilic counterion along with a second, different attached organic group, especially a steric group. In addition, claims 9-10 and 12-13, which depend directly or indirectly from claim 32, recite further embodiments of the present invention and, for at least the reasons discussed above, are also patentable over this reference.

Regarding claims 21-25 and 34-39, claim 21 recites an ink composition comprising at least one pigment product of claim 32, and claim 34 recites an ink composition comprising at least one pigment product of claim 33. Claim 39 recites a printing plate comprising a radiation-absorptive layer comprising at least one pigment of claim 33. Since, as discussed above, Applicant believes that Adams et al. does not disclose, teach, or suggest the pigment product of claim 32 or 33, Applicant further believes that there is no disclosure, teaching, or suggestion of either an ink composition or printing plate comprising such a pigment product.

Therefore, Applicant believes that claims 21, 34, and 39 are also patentable over Adams et al. Furthermore, claims 22-25 and 35-38, which depend directly from claims 21 and 34 respectively, recite further embodiments of the present invention and, for at least the reasons discussed above, are also patentable over this reference.

Applicant therefore believes that claims 9-10, 12-13, 21-25, and 32-39 are patentable over Adams et al. and respectfully requests that this rejection be withdrawn.

Regarding new claims 40 and 41, each of these claims recites a specific embodiment of the present invention in which the carbon black product has attached at least one aromatic or

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C1-C12 alkyl group further substituted with at least one -COO⁻, -SO₃⁻, -HPO₃⁻, or -PO₃⁻² group. Thus, each of these new claims are similar to claims 32 and 33 but recite more specific types of attached organic ionic groups – aromatic or C1-C12 alkyl groups further comprising the specifically recited groups. Applicant believes that each of these new claims are also patentable over Adams et al. since this reference does not disclose, teach, or suggest a carbon black product having attached both the specific type of organic ionic group having an amphiphilic counterion along with a second, different attached organic group, especially a steric group.

Conclusions

In view of the foregoing remarks, Applicant believes that this application is in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would further expedite the prosecution of the subject application, the Examiner is invited to call the undersigned.

Respectfully submitted,

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